

## REMARKS/ARGUMENTS

In the Final Office Action of October 6, 2009, claims 1-11, 13-16 and 18 were rejected under 35 U.S.C. 103. Additionally, claims 17, 19, and 20 were rejected under 35 U.S.C. 112, first paragraph and under 35 U.S.C. 112, second paragraph. However, claims 17, 19, and 20 were noted as being allowable if rewritten to overcome the rejections under 35 U.S.C. 112 and to include all of the limitations of the base claim and any intervening claims. Applicants hereby request reconsideration of the application in view of the below-provided remarks.

### Claim Rejections under 35 U.S.C. 112

Claims 17, 19, and 20 were rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, the Final Office Action stated that the claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicants respectfully submit that the subject matter that is contained in claims 17, 19, and 20 is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, claims 17, 19 and 20 recite that *“the combined result, the constant value and the multiple quantization errors of the different neighboring pixels satisfy:*

$$CR = X_{(x,y)} + CV + a \times QE(X_{(x-1,y-1)}) + b \times QE(X_{(x,y-1)}) + c \times QE(X_{(x+1,y-1)}) + d \times QE(X_{(x-1,y)}),$$

*where CR represents the combined result, CV represents the constant value, X(x,y) represents the current pixel that is located in column x and line y of an image, QE(X(x-1,y-1)) represents quantization error of a neighboring pixel that is located in column x-1 and line y-1 of the image, QE(X(x,y-1)) represents quantization error of a neighboring pixel that is located in column x and line y-1 of the image, QE(X(x+1,y-1)) represents quantization error of a neighboring pixel that is located in column x+1 and line y-1 of the image, QE(X(x-1,y)) represents quantization error of a neighboring pixel*

that is located in column  $x-1$  and line  $y$  of the image, and  $a$ ,  $b$ ,  $c$  and  $d$  represent multiplier coefficients for  $QE(X(x-1,y-1))$ ,  $QE(X(x,y-1))$ ,  $QE(X(x+1,y-1))$  and  $QE(X(x-1,y))$ , respectively."

Applicants respectfully submit that the subject matter that is contained in claims 17, 19 and 20 is found in Applicants' specification at, for example, Figs. 1-6, pages 4, lines 15-26, and page 5, lines 1-15. In particular, Applicants' specification on page 5, lines 6-15, describes that "*pixel value to be displayed=rounded  $(X(x,y)+1/2+1/16QE(x-1,y-1)+5/16QE(x,y-1)+3/16QE(x+1,y-1)+7/16QE(x-1,y)$*   
*with the current pixel value  $X(x,y)$ .*  
*with the value 1/2 from the memory 5 and*  
*with the values  $1/16QE(x-1,y-1)+5/16QE(x,y-1)+3/16QE(x+1,y-1)+7/16QE(x-1,y)$  as a*  
*total sum from filter 10*" (emphasis added). These underlined coefficients are "*multiplier coefficients*." Furthermore, Applicants' specification on page 5, lines 1 and 2, describes that "*with the constant value 1/2 it is definitely feasible for the rounding circuit 6 to perform a rounding function*" (emphasis added). Thus, a "*constant value*" for the equation recited in claim 1 is clearly described in Applicants' specification.

In summary, claims 17, 19 and 20 recite a "*constant value*" and "*multiplier coefficients*," which are clearly described in Applicants' specification as a "*constant value 1/2*" and coefficients "*1/16*," "*5/16*," "*3/16*," and "*7/16*." Applicants respectfully note that the subject matter of a claim need not be described literally (i.e., using the same terms or in haec verba) in order for the disclosure to satisfy the written description requirement.

Whenever the issue arises, the fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. See, e.g., *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was "ready for patenting" such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention. See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 68, 119 S.Ct. 304, 312, 48

USPQ2d 1641, 1647 (1998); *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997); *Amgen, Inc. v. Chugai Pharmaceutical*, 927 F.2d 1200, 1206, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991) (one must define a compound by "whatever characteristics sufficiently distinguish it").

The subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement. If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application. This conclusion will result in the rejection of the claims affected under 35 U.S.C.112, first paragraph - description requirement, or denial of the benefit of the filing date of a previously filed application, as appropriate. (Emphasis added) (See MPEP 2163.02).

Therefore, Applicants respectfully assert that claims 17, 19 and 20 satisfy the written description requirement, and request that the rejection to claims 17, 19, and 20 under 35 U.S.C. 112, first paragraph, be withdrawn.

Additionally, claims 17, 19, and 20 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Final Office Action stated that the constant value CV recited in claims 17, 19, and 20 is vague and indefinite. As described above, Applicants' specification describes the phrase "*constant value 1/2.*" Thus, Applicants respectfully submit that the constant value CV recited in claims 17, 19, and 20 is fully supported in Applicants' specification in a clear and definite manner. Thus, Applicants respectfully submit that the constant value CV recited in claims 17, 19, and 20 is not vague and indefinite. Thus, Applicants respectfully request that the rejection to claims 17, 19, and 20 under 35 U.S.C. 112, second paragraph, be withdrawn.

### Claim Rejections under 35 U.S.C. 103

Claims 1-3, 5 and 7 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen et al. (U.S. Pat. Pub. No. 2001/0005186 A1, hereinafter "Van Dalfsen") in view of Kwak et al. (U.S. Pat. No. 6,166,781, hereinafter "Kwak") further in view of Zlotnick (U.S. Pat. No. 6,522,784 B1). Claims 4 and 6 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen, Kwak and Zlotnick and further in view of Okada et al. (U.S. Pat. No. 5,854,799, hereinafter

“Okada”). Claims 8-11 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen, Kwak and Zlotnick and further in view of Lengyel (U.S. Pat. No. 6,614,428 B1). Claims 13-16 and 18 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen, Kwak and Zlotnick and further in view of Adachi et al. (U.S. Pat. Pub. No. 2004/0081266 A1, hereinafter “Adachi”). However, Applicants respectfully submit that the pending claims are patentable over the cited art for the reasons provided below.

#### Independent Claim 1

Applicants respectfully assert that the combination of Van Dalfsen, Kwak and Zlotnick fails to teach that “multiple quantization errors of different neighboring pixels of a current pixel are used to quantize the current pixel” (emphasis added), as recited in claim 1. As a result, Applicants respectfully assert that claim 1 is not obvious over Van Dalfsen, Kwak and Zlotnick.

The Final Office Action on page 5 admits that Kwak does not explicitly teach the above-identified limitation of claim 1. Additionally, the Final Office Action on page 6 states that “using absolute values in comparing the neighboring pixel data to determine the quantization error, QE, of the current pixel, is well known in the art and is commonly used to calculate the QE.” Furthermore, the Final Office Action on page 6 suggests that Zlotnick teaches “using absolute values in comparing the neighboring pixel data to determine the quantization error, QE, of the current pixel.”

However, Applicants respectfully submit that the current claim 1, which was previously amended, recites in part that “multiple quantization errors of different neighboring pixels of a current pixel are used to quantize the current pixel” (emphasis added), not “using absolute values in comparing the neighboring pixel data to determine the quantization error, QE, of the current pixel” (emphasis added), as stated in the Final Office Action. Thus, Applicants respectfully submits that the present Office Action failed to consider the patentability arguments presented in the most recently filed amendment. The MPEP requires that, in response to Applicants’ traversal of the rejection, the examiner should take note of Applicants’ argument and answer the substance of it. MPEP 707.7(f). Thus, Applicants respectfully submit that the finality of

the present Office Action is premature. Accordingly, Applicants respectfully request that the finality of the present Office Action be withdrawn.

Additionally, Applicants respectfully assert that Zlotnick fails to teach the above-identified limitation of claim 1. As shown Fig. 2, Zlotnick teaches a pixel reordering step (32) where original pixel values are mapped sequentially according to their respective quantization levels. (See column 6, lines 1-13 of Zlotnick). Zlotnick further teaches that the outcome of this reordering is that the absolute differences between the pixel values of neighboring pixels are substantially reduced. (See column 6, lines 14-23 of Zlotnick). However, Zlotnick is silent as to using multiple quantization errors of different neighboring pixels of a current pixel to quantize the current pixel. Thus, Applicants respectfully assert that Zlotnick fails to teach that “multiple quantization errors of different neighboring pixels of a current pixel are used to quantize the current pixel” (emphasis added), as recited in claim 1. As a result, Applicants respectfully assert that claim 1 is not obvious over Van Dalfsen, Kwak and Zlotnick.

#### Claims 13 and 16-18

Claims 13 and 16-18 depend from and incorporate all of the limitations of independent claim 1. Thus, Applicants respectfully assert that claims 13 and 16-18 are allowable at least based on an allowable claim 1. Additionally, Applicants respectfully assert that each of claims 13, 16, and 18 are allowable because of their limitations.

#### Independent Claim 2

Claim 2 includes a similar limitation to claim 1. Because of the similarity between claim 2 and claim 1, Applicants respectfully assert that the remarks provided above with regard to claim 1 apply also to claim 2. As a result, Applicants respectfully assert that claim 2 is not obvious over Van Dalfsen, Kwak and Zlotnick.

#### Dependent Claims 14 and 19

Claims 14 and 19 depend from and incorporate all of the limitations of independent claim 2. Thus, Applicants respectfully assert that claims 14 and 19 are allowable at least based on an allowable claim 2.

Independent Claim 3

Claim 3 includes a similar limitation to claim 1. Because of the similarity between claim 3 and claim 1, Applicants respectfully assert that the remarks provided above with regard to claim 1 apply also to claim 3. As a result, Applicants respectfully assert that claim 3 is not obvious over Van Dalfsen, Kwak and Zlotnick.

Dependent Claims 4-11, 15 and 20

Claims 4-11, 15 and 20 depend from and incorporate all of the limitations of independent claim 3. Thus, Applicants respectfully assert that claims 4-11, 15 and 20 are allowable at least based on an allowable claim 3.

## CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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